

CLAIMS

1. Method for preparing strong base phosphates, comprising:
  - forming a pulp consisting of an aqueous phase, which contains water-soluble calcium phosphate in the form of calcium ions and phosphate ions, and a solid phase which contains impurities,
  - separating said liquid phase and said solid phase,
  - in the liquid phase resulting from said separation, displacing the calcium ions by ions of a strong base which results in formation of an aqueous solution of phosphate(s) of said strong base and precipitation of a water-insoluble calcium phosphate, and
  - isolating the precipitated calcium phosphate from the aqueous solution of strong base phosphate(s), characterized in that the step of forming said pulp comprises
- 15 - mixing phosphate ore and phosphoric acid for etching, in order to obtain a pasty triple superphosphate (TSP) composition, and
  - adding water to the TSP composition obtained.
2. Method according to Claim 1, characterized in that said forming step comprises drying the TSP composition and optionally storing it, between the aforementioned mixing step and the water addition step.
- 20 3. Method according to either one of Claims 1 and 2, characterized in that the phosphoric acid for etching has a P<sub>2</sub>O<sub>5</sub> content of between 30% and 50% by weight, preferably between 35 and 40% by weight.
- 25 4. Method according to any one of Claims 1 to 3, characterized in that the pulp of the forming step has a pH of 1.2 to 3.2, preferably 2 to 3, advantageously 2.5.
- 30 5. Method according to any one of Claims 1 to 4, characterized in that, in said pulp, the molar ratio Ca/P is around 0.4 to 0.6, preferably 0.45.
- 35 6. Method according to any one of Claims 1 to 5, characterized in that it takes place at ambient pressure and temperature.

7. Method according to any one of Claims 1 to 6, characterized in that said strong base ions are sodium ions, potassium ions and/or ammonium ions.
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8. Method according to any one of Claims 1 to 7, characterized in that the water-soluble phosphate is in the form of calcium dihydrogen phosphate (MCP), and in that the water-insoluble calcium phosphate is in the form of calcium monohydrogen phosphate (DCP).
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9. Method according to any one of Claims 1 to 8, characterized in that, during the displacement in the liquid phase resulting from said separation, said liquid phase has a pH of 4.5 to 7, preferably 5 to 6.5, advantageously 6.
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10. Method according to any one of Claims 1 to 9, characterized in that, in order to obtain said displacement, Na<sub>2</sub>CO<sub>3</sub> and/or NaOH is added to the liquid phase resulting from said separation, in a quantity such that the molar ratio Na/P is around 1 to 3, preferably around 1.67.
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11. Method according to Claim 10, characterized in that the aqueous solution of strong base has a molar ratio between sodium monohydrogen phosphate and sodium dihydrogen phosphate of around 2/1.
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12. Method according to any one of Claims 1 to 11, characterized in that the phosphoric acid for etching is phosphoric acid known as WPPA.

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